

### **III. REMARKS**

Claims 1, 34, 39 and 44 are amended. Claim 47 is new and corresponds to features described in the specification and shown in the drawings as originally filed. The Applicant would like to thank the Examiner for the indication of allowable subject matter in claim 11.

The Applicant requests a telephone interview with the Examiner after the Examiner has reviewed the amendments and arguments made herein but before the issuance of the next office action.

Claim 44 is patentable under 35 USC 102(a) over Bonora et al. (US 6494308, hereinafter "Bonora"). Claim 44 recites a conveyor transport section including a drive track for driving the container, the drive track having track elements interfacing with the container for driving the container, wherein the drive track is modular with drive track modules, each drive track module defining a length of the drive track for a predetermined drive track length and being adapted to be removed and joined together, as a unit, end to end to form extended lengths of the drive track during drive track installation, wherein each drive track module has at least one of the track elements integral thereto.

The Examiner is respectfully reminded that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), and that "[t]he identical invention must be shown in as

complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). It is submitted that Bonora does not disclose each and every element as set forth in Applicant's claim 44 such that the identical invention is shown in as complete detail as is contained in the claim.

The Examiner argues that even if all the rails in Bonora were one continuous piece they would still form a module because Bonora teaches using connector 60 to connect the drive and idler rails. This reasoning is specious at best because Applicant is not claiming joining drive and idler rails with a connector 60 as is disclosed in Bonora (Col. 9, L. 63-67). Applicant's claim 44 recites that the drive track is modular with drive track modules, each drive track module defining a length of the drive track for a predetermined drive track length and being adapted to be removed and joined together, as a unit, end to end to form extended lengths of the drive track during drive track installation. There is simply no disclosure of this drive track arrangement in Bonora.

All that is disclosed in Bonora is that the conveyor system 10 includes a pair of rails 12, 14 for supporting the transport pod 8 as it is moved along the conveyor path. All power for driving the pod 8 is supplied via the drive rail 12. Rail 14 is an idler rail or support rail with the sole function of supporting the transport pod 8 such that the pod 8 is held in a level, uniformly balanced orientation as it is moved along the conveyor path. (Col. 5, L. 27-29). The mere recitation in Bonora that "[o]ne or more connectors 60 are mounted to the drive and idler rails 12, 14 to maintain a predetermined spacing between the

rails and facilitate installation of the conveyor" (Col. 9, L. 63-66) neither expressly nor inherently implies that the drive track 12 of Bonora comprises "drive track modules" as recited in Applicant's claim 44.

Thus, claim 44 is patentable over Bonora because Bonora does not disclose (expressly or inherently) that the drive track 14 is "modular with drive track modules" where "each drive track module defining a length of the drive track for a predetermined drive track length and being adapted to be removed and joined together, as a unit, end to end to form extended lengths of the drive track during drive track installation."

Claims 1, 15-18, 20, 34, 35-39 and 40 are patentable under 35 USC 103(a) over Bonora, Lin et al. (US 2003/0198540, hereinafter "Lin") and Mizokawa et al. (US 6863485, hereinafter "Mizokawa"). Claim 1 recites that the first transport section is a vehicle based section having a transport vehicle capable of holding the container and moving along a first track of the first transport section, and the second transport section is not a vehicle based section and has a second track with at least one support element of the second track adapted to interface with the container for movably supporting the container from the second track and allowing the container to move relative to the first track, and wherein the second transport section has a motor connected to the second track for moving the container on the second track and stopping the container on the second track in alignment with the transport vehicle positioned at a variable location on the first track so that the container can be picked from the second

track by the transport vehicle without repositioning of both the container and the transport vehicle once the container is stopped on the second track.

The Examiner admits that Bonora does not disclose or suggest a vehicle based transport section but refers to Lin as disclosing the same. It is submitted that one skilled in the art would not combine Bonora with Lin as Bonora expressly teaches away from using the system of Lin. The Examiner is respectfully reminded that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Lin discloses an interbay transfer interface between an automated material handling system and a stocker which includes a conveyor belt (having open topped containers) positioned juxtaposed to the stocker for transporting FOUPS 44 placed within the open topped containers into the stocker (Abstract). In Lin the automated material handling system is an overhead transport (OHT) system 32 having a vehicle 36 that rides on the OHT track 38. A FOUP 44 is carried by the OHT vehicle 36 such that the OHT vehicle 36 lowers the FOUP 44 into the open topped container 60 for transport into the stocker 30. (Paras. [0033] and [0034]). This configuration in Lin is precisely the configuration Bonora is trying to overcome.

Bonora specifically recites at column 2, L. 57-67 that "[o]verhead monorail systems," such as the OHT transport system 32 in Lin, "are also used to transport pods along the intra-bay

loop. Hoists or similar devices," such as those found on the OHT vehicles 36 of Lin, "are used to lower the pods onto the load port of the processing machine," such as the stocker 30 in Lin. "In order to successfully transfer the pod from the monorail to the machine, the pod must be precisely aligned with the load port and lowered onto the port in a controlled manner such that any swing of the pod is minimized. After processing, the pod is raised and transported to the next machine. Repeatedly raising and lowering the pod is challenging. An automated conveyor system which positions the pod for direct, efficient transfer to the load port is desirable." Thus, Bonora is expressly abandoning the OHT transport system, such as the OHT system 36 of Lin, for use of the conveyor track system of Bonora.

Therefore, one skilled in the art would not combine Bonora and Lin as suggested by the Examiner based on the above teachings of Bonora. Thus, claim 1 is patentable over the combination of Bonora, Lin and Mizokawa at least for this reason.

Further, claim 1 recites that the second transport section (that is not vehicle based) has a motor connected to the second track for moving the container on the second track and stopping the container on the second track in alignment with the transport vehicle positioned at a variable location on the first track so that the container can be picked from the second track by the transport vehicle without repositioning of both the container and the transport vehicle once the container is stopped on the second track. Nowhere is this feature disclosed by the combination of Bonora and Lin.

As described above, Bonora only discloses a single conveyor system 10 and nothing more. Combining Bonora with Lin, fails to remedy the deficiency of Bonora.

Lin, as described above, merely discloses an interbay transfer interface between an OHT system 32 having a vehicle 36 and a stocker which includes a conveyor belt (having open topped containers) positioned juxtaposed to the stocker for transporting FOUPS 44 placed within the open topped containers into the stocker (Abstract). There is no disclosure whatsoever in Lin that the conveyor belt "has a motor connected to the second track for moving the container on the second track and stopping the container on the second track in alignment with the transport vehicle positioned at a variable location on the first track so that the container can be picked from the second track by the transport vehicle without repositioning of both the container and the transport vehicle once the container is stopped on the second track" as recited by Applicant. All that is disclosed in Lin is nothing more than "[t]he conveyor belt is capable of moving an object such as a wafer cassette or any other materials in between the two stockers" (Para. [0033]). Thus, the combination of Bonora and Lin fails to disclose a second transport section that has a motor connected to the second track for moving the container on the second track and stopping the container on the second track in alignment with the transport vehicle positioned at a variable location on the first track so that the container can be picked from the second track by the transport vehicle without repositioning of both the container and the transport vehicle once the container is stopped on the second track as recited in Applicant's claim 1.

Combining Mizokawa with Bonora and Lin fails to remedy the deficiencies of Bonora and Lin. Mizokawa discloses a transport chamber 14 formed parallel to wafer processing apparatus. A guide rail 11 is provided along the longer side of the chamber 14 and a mobile element 12 is provided moveably along the guide rail 11. A wafer transport robot is attached to the mobile element 12. (Col. 4, L. 18-33). Thus, Mizokawa only discloses a single transport (i.e. guide rail 11 and mobile element 12).

Therefore, even if Bonora, Lin and Mizokawa are combined, their combination cannot disclose or suggest a second transport section (that is not vehicle based) has a motor connected to the second track for moving the container on the second track and stopping the container on the second track in alignment with the transport vehicle positioned at a variable location on the first track so that the container can be picked from the second track by the transport vehicle without repositioning of both the container and the transport vehicle once the container is stopped on the second track as recited in Applicant's claim 1. Thus, claim 1 is patentable over the combination of Bonora, Lin and Mizokawa.

Claim 34 is patentable over the combination of Bonora, Lin and Mizokawa at least because one skilled in the art would not combine Bonora with Lin for reasons substantially similar to those described above with respect to claim 1 as Bonora specifically teaches away from what is taught in Lin.

Moreover, claim 34 recites a second transport section (that is not vehicle based) connected to the first transport section (that is vehicle based) for transporting the containers between

separate locations of the first transport section. Nowhere are these features of claim 34 disclosed or suggested by the combination of Bonora, Lin and Mizokawa. As described above, Bonora only discloses a single conveyor system 10 and nothing more. Lin, as described above, merely discloses an interbay transfer interface between an OHT system 32 having a vehicle 36 and a stocker which includes a conveyor belt (having open topped containers) positioned juxtaposed to the stocker for transporting FOUPS 44 placed within the open topped containers into the stocker (Abstract). Mizokawa, as also described above, merely discloses a single transport (i.e. the guide rail 11 and mobile element 12). Bonora, Lin and Mizokawa alone or in combination simply do not disclose or suggest a second transport section (that is not vehicle based) connected to the first transport section (that is vehicle based) for transporting the containers between separate locations of the first transport section as recited in Applicant's claim 34. Thus, claim 34 is patentable for this additional reason.

Claim 39 is patentable over the combination of Bonora, Lin and Mizokawa for reasons that are substantially similar to those described above with respect to claim 1. Claims 15-18, 20, 35-38 and 40 are patentable over the combination of Bonora, Lin and Mizokawa at least by reason of their respective dependencies.

Claims 2-10 and 12-14 are patentable under 35 USC 103(a) over Bonora, Lin and Belna (US 4624617). Claims 2-10 and 12-14 depend from claim 1. The combination of Bonora and Lin do not disclose or suggest all the features of claim 1 for the reasons

described above. Thus, it is submitted that the combination of Bonora, Lin and Belna cannot as well. Therefore claims 2-10 and 12-14 are patentable at least by reason of their respective dependencies.

Further, claim 4 recites at least a portion of the motor is molded in a portion of the frame assembly. This is not disclosed or suggested by the combination of Bonora, Lin and Belna. Bonora and Lin are silent as to the features of claim 4. Belna merely discloses that "a plurality of permanent magnets 42 are disposed in the car 14 beneath the fork 20 and between the car guides 18" (Col. 3, L. 4-7). There is absolutely no disclosure in Belna of "molding" "a portion of the motor" "in a portion of the frame assembly" as recited in claim 4. Thus, claim 4 is patentable for this additional reason.

Claim 5 recites at least a portion of the motor is removably mounted to the frame assembly. This feature is not disclosed or suggest by the combination of Bonora, Lin and Belna for reasons substantially similar to those described above with respect to claim 4.

With respect to claims 13 and 14, it is noted that claims 13 and 14 depend from claim 2 and thereby incorporate all of the features of claim 2. The Examiner asserts that Fig. 2 of Bonora discloses the features of claims 13 and 14, however, Bonora does not disclose "at least a portion of the motor being mounted to the container" as recited in claim 2. Thus, it is assumed that the Examiner is using Bonora as modified by Belna in rejecting claims 13 and 14. Claim 13 recites that the motor is adapted for bi-directionally driving the container so that the container

is capable of moving bi-directionally along two different axes. Claim 14 recites that the two different axes are crossing axes. It is submitted that the combination of Bonora and Belna is incapable of disclosing the features of claim 13 and 14.

The drive in Belna includes a track 12 having a bottom flange 26 to which is attached a pair of vertical support flanges 24 supporting a horizontal track 28 (Col. 2, L. 61-63). The vertical support flanges 24 and the horizontal track 28 form a T-shaped structure (Fig. 4). The car 14 that rides along the track in Belna includes a U-shaped fork 20 attached to a pair of guides 18 which engage the track by wrapping around the T-shaped structure (Col. 2, L. 59-61; Fig. 4). The linear induction motor used in Belna comprises permanent magnets 42 disposed in the car 14 beneath the fork 20 and between the car guides 18. Precise control of the degree of levitation of the car 14 relative to the track 12 is facilitated by means of permanent magnetic grooves 48 in the car guides 18 having a generally "V" shape that oppose the repulsive forces generated by magnets 42 beneath the fork 20. (Col. 3, L. 3-31). Thus, because the drive and motor in Belna requires opposing magnetic forces located on opposite sides of the horizontal track 28 for levitation, the drive and motor of Belna is precluded from traveling along more than one axis (i.e. the guides 18 lock the car 14 and the portions of the motor from traveling transverse to the track 12). Thus, any modification of Bonora with the drive of Belna would prevent the transport pods 8 in Bonora from changing direction at intersections 26 as the change in direction of pods 8 in Bonora involves lifting the pods 8 off of the track (Col. 6, L. 36-41) which would be impossible with the

linear induction motor arrangement of Belna. As such, modifying Bonora with Belna would render Bonora unsatisfactory for its intended purposes while changing the principle operation (see MPEP § 2143.01) of Bonora as Bonora would no longer be capable of navigating the intersections 26 shown in Fig. 2 of Bonora.

It is noted that in order for the combination of Bonora and Belna to work, Bonora would have to be heavily redesigned as is evident from the above. Thus, incorporating the linear induction motor of Belna into Bonora cannot reasonably be considered a simple substitution of one known element for another to obtain predictable results.

Claims 21-26, 28-32, 45 and 46 are patentable under 35 USC 103(a) over Bonora and Belna. Claim 21 recites a motor connected to the track for driving the at least one container along the track, wherein at least part of the motor is mounted to the frame assembly of the at least one container so that the frame assembly and the part of the motor mounted thereto are removed from the track as a unit causing disconnection of the part of the motor, mounted to the frame assembly, from another part of the motor connected to the track. Nowhere are these features disclosed by the combination of Bonora and Belna.

The Examiner admits that the above noted features are not disclosed or suggested by Bonora. However, the Examiner cites to Belna as disclosing these features of claim 21 and asserts that only the drive system of Belna is being incorporated into Bonora as a simple substitution with the Bonora drive for yielding a linear magnetic motor with a removable container.

This assertion is specious in that incorporating just the drive system of Belna would render Bonora unsatisfactory for its intended purpose and change its principle of operation (see MPEP § 2143.01).

As described above, the drive in Belna includes a track 12 having a bottom flange 26 to which is attached a pair of vertical support flanges 24 supporting a horizontal track 28 (Col. 2, L. 61-63). The vertical support flanges 24 and the horizontal track 28 form a T-shaped structure (Fig. 4). The car 14 of Belna (or transport pod 8 of Bonora according to the Examiner's combination of references) that rides along the track 12 includes a U-shaped fork 20 attached to a pair of guides 18 which engage the track by wrapping around the T-shaped structure (Col. 2, L. 59-61; Fig. 4). The linear induction motor used in the drive of Belna comprises permanent magnets 42 disposed in the car 14 beneath the fork 20 and between the car guides 18. Precise control of the degree of levitation of the car 14 relative to the track 12 is facilitated by means of permanent magnetic grooves 48 in the car guides 18 that oppose the repulsive forces generated by magnets 42 beneath the fork 20. (Col. 3, L. 3-31). Thus, because the drive and motor in Belna requires opposing magnetic forces located on opposite sides of the horizontal track 28 (which in turn require the car guides 18 to wrap around the horizontal track 28), the car 14 of Belna (or transport pod 8 of Bonora according to the Examiner's combination of references) is incapable of being removed from the horizontal track 28.

Thus, the Examiner's assertion that the combination of Belna and Bonora would be a simple substitution is not supported by the

teachings of the prior. Bonora (and Belna) would have to be completely redesigned in order to combine the references to achieve what is claimed by Applicant as any combination of Bonora and Belna would result in a transport pod 8 that is not removable from the drive rail 12. The Examiner's rejection appears to be based solely on hindsight especially when Bonora and Belna do not disclose or suggest at least part of the motor is mounted to the frame assembly of the at least one container so that the frame assembly and the part of the motor mounted thereto are removed from the track as a unit causing disconnection of the part of the motor, mounted to the frame assembly, from another part of the motor connected to the track for reasons substantially similar to those described above.

Therefore, claim 21 is patentable over the combination of Bonora and Belna for the above-described reasons. Claim 28 is patentable over the combination of Bonora and Belna for reasons that are substantially similar to those described above with respect to claim 21. Claims 22-26, 29-32, 45 and 46 are patentable at least by reason of their respective dependencies.

Further, claim 30 recites that the motor portion is adapted to cooperate with the other motor portion for driving the container in crossing directions relative to the track; claim 45 recites the at least part of the motor that is mounted to the frame assembly of the at least one container defines a multiaxial drive motor; and claim 46 recites that the motor portion mounted to the frame defines a multiaxial drive motor. The features of claims 30, 45 and 46 are patentable over the combination of Bonora and Belna for reasons substantially similar to those described above with respect to claims 13 and 14.

Claims 27 and 33 are patentable under 35 USC 103(a) over Bonora, Belna and Lin. Claims 27 and 33 depend from claims 21 and 28. The combination of Bonora and Belna does not disclose or suggest all of the features of claims 21 and 28 for the reasons described above. It is submitted that the combination of Bonora, Belna and Lin cannot as well. Thus, claims 27 and 33 are patentable at least by reason of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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